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(54) Title: LITHOGRAPHIC PRINTING PRECURSOR AND METHOD OF MAKING A PRINTING PLATE BY INK JET IMAGING

(57) Abstract: A method of preparing offset lithographic plates using specially formulated aqueous ink jet inks is described. The inks may either be pigment based and provide oleophilic images on specially formulated hydrophilic plate surfaces, or may contain chemical switches which provide the image on the plate by causing its surface to switch from hydrophilic to oleophilic or vice-versa. The lithographic printing plates comprise a coating, said coating comprising polyvinyl alcohol, polyacrylic acid, hydrophobic water-based emulsion with a PH of 7 or below aminoplast and a teast one metting agent.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B41C1/00 B41N1/08 B41N3/03

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B41C B41N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/055058 A1 (TAN SHIRO ET AL) 9 May 2002 (2002-05-09) paragraphs '0052!', '0165!', '0181!', '0183!', '0185!', '0190!'	1-30, 38, 39
X	EP 1 057 622 A (FUJI PHOTO FILM CO LTD) 6 December 2000 (2000-12-06) paragraphs '0165!', '0246!', '0247!', '0266!' - '0268!', '0314!', '0317!', '0318!'	1-30, 38, 39
A	EP 1 116 580 A (FUJI PHOTO FILM CO LTD) 18 July 2001 (2001-07-18) paragraphs '0045!', '0046!', '0080!', '0221!', '0359!; claim 1 ----- -/-	1-30, 38, 39

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/051929 A1 (FUJITA KAZUO ET AL) 2 May 2002 (2002-05-02) paragraphs '0207!, '0214!, '0226!, '0573!	1-30, 38, 39
A	US 5 677 110 A (LANGLAIS EUGENE L ET AL) 14 October 1997 (1997-10-14) claims 19,20	1-30, 38, 39
X	EP 1 144 199 A (EASTMAN KODAK CO) 17 October 2001 (2001-10-17) claims 1,5	31-33, 35-37
X	US 6 113 772 A (ROMPUY LUDO VAN) 5 September 2000 (2000-09-05) column 4, line 29 - column 5, line 5	34
A	US 6 261 353 B1 (YAMASHITA KUNICHI ET AL) 17 July 2001 (2001-07-17) column 10, line 56	31-33, 36, 37
A	CN 1 310 215 A (SOUTH CHINA SCIENCE & ENGINEER) 29 August 2001 (2001-08-29) abstract	31-33, 36, 37
A	DATABASE WPI Section Ch, Week 199837 Derwent Publications Ltd., London, GB; Class A97, AN 1998-434155 XP002299527 & JP 10 183038 A (KONICA CORP) 7 July 1998 (1998-07-07) abstract	31-33, 35, 36
A	DATABASE WPI Section Ch, Week 198734 Derwent Publications Ltd., London, GB; Class A97, AN 1987-240161 XP002299528 & JP 62 164773 A (TORAY IND INC) 21 July 1987 (1987-07-21) abstract	31-33, 35, 36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL 03/01032

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-30,38,39

Claims 1-20 refer to a lithographic printing blank comprising a coating deposited from aqueous fluid onto a substrate, the coating comprising polyvinyl alcohol, polyacrylic acid, hydrophobic water-based emulsion with pH of 7 or below, aminoplast and at least a wetting agent. Claims 21-30 refer to the method of preparing a lithographic plate using said blank. Claims 38-39 refer to a wet printing process using said lithographic printing plate in order to produce printed impressions.

2. claims: 31-37

Claims 31-37 refer to an ink-jet ink comprising switchable material.

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002055058	A1	09-05-2002	JP 2002072474 A	12-03-2002
EP 1057622	A	06-12-2000	JP 2001054986 A	27-02-2001
			EP 1057622 A2	06-12-2000
			JP 2001047755 A	20-02-2001
			US 6653042 B1	25-11-2003
EP 1116580	A	18-07-2001	JP 2001191656 A	17-07-2001
			JP 2001281852 A	10-10-2001
			AT 268691 T	15-06-2004
			DE 60103670 D1	15-07-2004
			EP 1116580 A2	18-07-2001
			US 2001036592 A1	01-11-2001
US 2002051929	A1	02-05-2002	JP 11288093 A	19-10-1999
			JP 11352681 A	24-12-1999
			JP 11327134 A	26-11-1999
			JP 2000010281 A	14-01-2000
			DE 69905959 D1	24-04-2003
			DE 69905959 T2	04-12-2003
			EP 1225478 A2	24-07-2002
			EP 1314552 A2	28-05-2003
			EP 0949539 A2	13-10-1999
			US 2002086233 A1	04-07-2002
US 5677110	A	14-10-1997	US 5677108 A	14-10-1997
			CA 2207434 A1	31-10-1996
			EP 0823071 A1	11-02-1998
			JP 11504436 T	20-04-1999
			WO 9634317 A1	31-10-1996
EP 1144199	A	17-10-2001	DE 69906380 D1	30-04-2003
			DE 69906380 T2	05-02-2004
			EP 1144199 A2	17-10-2001
			JP 2002532311 T	02-10-2002
			US 6520086 B1	18-02-2003
			WO 0037261 A2	29-06-2000
US 6113772	A	05-09-2000	EP 0941838 A1	15-09-1999
			DE 69811470 D1	27-03-2003
			DE 69811470 T2	06-11-2003
			JP 2000025194 A	25-01-2000
US 6261353	B1	17-07-2001	JP 11343435 A	14-12-1999
			JP 11349873 A	21-12-1999
CN 1310215	A	29-08-2001	NONE	
JP 10183038	A	07-07-1998	NONE	
JP 62164773	A	21-07-1987	NONE	